REMARKS

Applicants respectfully request a favorable reconsideration of the claims. Claims 1, 6, and 8 have been revised. The revisions are supported by, for example, Fig. 1, TABLE 1, and pages 6-7 in the Specification. There is no new matter. Claims 1-3 and 5-9 are pending.

Status of Claims

Item 1 of the Office Action stated that "claim 3 was cancelled." This is a typographical error. In the Amendment filed on June 18, 2008, claim 4 was canceled. Claim 3 was not canceled. Applicants respectfully request confirmation in the next official communication that claim 3 is not canceled.

Claim Rejections – 35 USC § 112

Claims 1-3 were rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. Applicants do not concede the correctness of this rejection. Claim 1 has been revised to address this rejection. Claim 1 is supported by the original claim 1 and the disclosure in the Specification. Applicants respectfully request that the rejection be withdrawn.

Claim Rejections – 35 USC § 103

Claims 1, 6, and 8 were rejected under 35 U.S.C. 103(a) as being unpatentable over Winkler (EP 918095 A1). Applicants do not concede the correctness of the rejection.

Winkler teaches a die cast aluminum alloy containing scandium (Sc) as an essential element in the alloy. Winkler teaches that the "instant invention takes advantage of the finding that scandium and zirconium remain with rapid cooling mostly in supersaturated solution and with temperatures in the range between approximately 230 and 350 DEG C to fine-disperse, submikronen eliminations lead. With an addition of scandium therefore the strength of the basic alloy can become by a precipitation hardening increased. Scandium can become partial by zirconium replaced; a combination of both elements leads due to the formation of the isomorphic phases Al_3Sc and Al_3Zr, which are both characterized as cubic face-centered superstructure phases in the aluminum matrix lattice, to the favorable hardening by precipitation effect

according to invention" (paragraph [0009], EPO translation). Winkler teaches that isomorphic phase Al_3Sc in the alloy advantageously increases the firmness of the alloy (see paragraph [0009]-[0010], EPO translation). Thus, Winkler teaches that scandium materially affects the basic characteristics of an aluminum alloy and is an essential element to the alloy taught in Winkler. Winkler teaches that a minimum amount of scandium is 0.05 wt% in the alloy to achieve the stated advantageous results. Thus, even if Winkler teaches an alloy having overlapping ranges of certain elements, which Applicants are not conceding, the alloy according to the teachings in Winkler requires scandium in sufficient amount to form isomorphic phase Al_3Sc in the alloy.

In contrast, claim 1 requires an Al-Mg casting alloy consisting essentially of 3.5 wt % ≤ Mg ≤ 4.5 wt %, 0.8 wt % ≤ Mn ≤ 1.5 wt %, Si < 0.5 wt %, Fe < 0.5 wt %, a sum (Ti + Zr) of the amounts of Ti and Zr added of equal to or greater than 0.3 wt %, and a ratio (Ti/Zr) of the amounts of Ti and Zr added of at least 0.3 but not more than 2, with the balance being Al. An alloy according to claim 1 does not include scandium in the range as taught in Winkler such that it would materially affect the nature of the alloy. Accordingly, the essential element of the alloy according to Winkler is not included in claim 1. Further, according to the teachings in Winkler, addition of scandium to an alloy as claimed in claim 1 would materially change the isomorphic phase structure by introducing Al_3Sc in the alloy and change the strength and firmness of the alloy. Therefore, it would not have been obvious to one of ordinary skill in the art to take the teachings of Winkler and remove an essential element that Winkler specifically teaches is required to achieve the benefits and advantages stated therein. Thus, claim 1 is not obvious in view of Winkler. Applicants respectfully request a favorable reexamination of the claim.

Claim 6 requires an Al-Mg casting alloy consisting essentially of 3.5 wt % ≤ Mg ≤ 4.5 wt %, 0.8 wt % ≤ Mn ≤ 1.5 wt %, Si < 0.5 wt %, Fe < 0.5 wt %, Ti > 0.2 wt %, a sum (Ti + Zr) of the amounts of Ti and Zr added of equal to or greater than 0.3 wt %, and a ratio (Ti/Zr) of the amounts of Ti and Zr added of at least 0.3 but not more than 2, with the balance being Al. Accordingly, for at least the same reasons as claim 1, claim 6 is not obvious in view of Winkler. Applicants respectfully request a favorable reexamination of the claim.

Claim 8 requires an Al-Mg casting alloy consisting essentially of 3.5 wt % ≤ Mg ≤ 4.5 wt %, 0.8 wt % ≤ Mn ≤ 1.5 wt %, Si < 0.5 wt %, Fe < 0.5 wt %, Zr > 0.3 wt %, a sum (Ti + Zr) of the amounts of Ti and Zr added of greater than 0.3 wt %, and a ratio (Ti/Zr) of the amounts of Ti and Zr added of at least 0.3 but not more than 2, with the balance being Al. Accordingly, for at least the same reasons as claim 1, claim 8 is not obvious in view of Winkler Applicants respectfully request a favorable reexamination of the claim.

Claim 2 was rejected under 35 U.S.C. 103(a) as being unpatentable over Winkler in further view of Komazaki (US 2002/0141896). Applicants do not concede the correctness of the rejection. Komazaki does not remedy the deficiencies of Winkler stated above in regard to claim 1. Claim 2 is patentable for at least the same reasons as claim 1 from which it depends. Applicants respectfully request a favorable reexamination and reconsideration of the claim.

Claims 3, 5, 7, and 9 were rejected under 35 U.S.C. 103(a) as being unpatentable over Winkler in further view of Spanjers et al. (US 2002/0006352 A1). Applicants do not concede the correctness of the rejection.

Spanjers et al. does not remedy the deficiencies of Winkler stated above in regard to claims 1, 6, and 8. Claims 3 and 5 are allowable for at least the same reasons as claim 1 from which they depend. Claim 7 is allowable for at least the same reasons as claim 6 from which it depends. Claim 9 is allowable for at least the same reasons as claim 8 from which it depends.

Further, Spanjers et al. teaches that zinc (Zn) is an essential alloying element. According to Spanjers et al., zinc materially affects the nature of the alloy by providing strength in the as-cast condition and the welded joins of the alloy. Spanjers et al. teaches that zinc below 0.10 % is considered an impurity element. Thus, according to Spanjers et al. zinc should be present in a range of 0.10 to 1.5 % to provide the advantageous strength improvement (see paragraphs [0042]-[0043]). In contrast, claims 1, 6, and 8 do not require zinc at a higher level than that is considered to be an impurity. It would not have been obvious to one of ordinary skill in the art to take the teachings of Spanjers et al. and remove an essential element that Spanjers et al. specifically teaches is required to achieve the benefits and advantages stated therein.

Further, Spanjers et al. teaches that "Sc level should not exceed 0.3%, and is preferably in a range of 0.05 to 0.2%" (paragraph [0045]). Accordingly, even if one of ordinary skill in the art

were to be motivated to combine the teachings of Winkler and Spanjers et al., which Applicants do not concede that there is such a motivation, the resulting alloy from the combined teachings would include scandium and zinc as essential elements. Claims 3, 5, 7, and 9 do not include an alloy having scandium and zinc as essential elements. Accordingly, claims 3, 5, 7, and 9 are not obvious in view of Winkler and further in view of Spanjers et al. Applicants respectfully request a favorable reexamination and reconsideration of the claims.

In view of the above, it is submitted that the application is in condition for allowance. Reconsideration and reexamination are requested. Allowance of the claims at an early date is solicited. Any questions regarding this communication can be directed to the undersigned attorney, Curtis B. Hamre, Reg. 29,165, at (612) 455-3802.

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Dated: January 8, 2009

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